

# SAMSUNG

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## Defendants' *Markman* Presentation

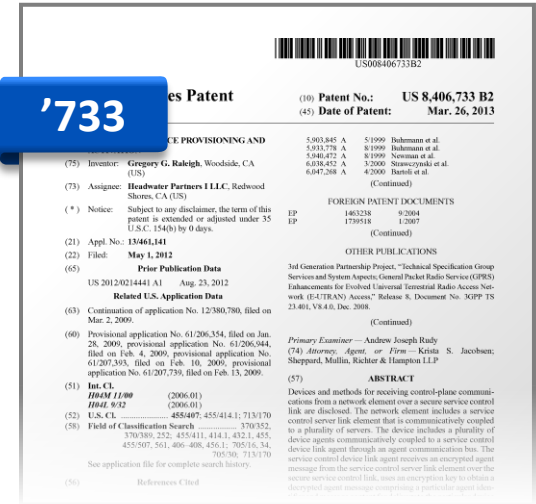
*Headwater Research LLC v.  
Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.*

Case: 2:23-CV-00103-JRG-RSP

*July 11, 2024*

# Asserted Patents at Issue

## U.S. Patent No. 8,406,733



Automated Device  
Provisioning and  
Activation  
Filed on May 1, 2012

D94-2 Ex. 1

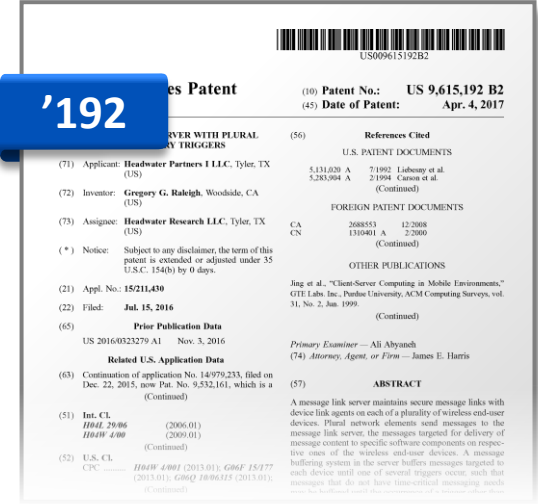
## U.S. Patent No. 9,198,117



Network System with Common  
Secure Wireless Message Service  
Serving Multiple Applications on  
Multiple Wireless Devices  
Filed on March 24, 2015

D94-3 Ex. 2

## U.S. Patent No. 9,615,192



Message Link Server  
with Plural Message  
Delivery Triggers  
Filed on July 15, 2016

D94-4 Ex. 3

# Summary of Disputed Claim Terms

	Patent	Term	Claims
1	'733	"device agents"	1, 19, 26, 30
2	'733	"wherein the particular device agent is configured to assist in presenting a notification through the user interface, the notification based on the message content"	19
3	'117	"device messaging agents"	1, 4, 5, 6, 12, 13, 14, 18
4	'192	"software components"	1, 4, 15
5	'192	"wherein one of the message delivery triggers is the receipt of a particular network element message from one of the network elements"	13

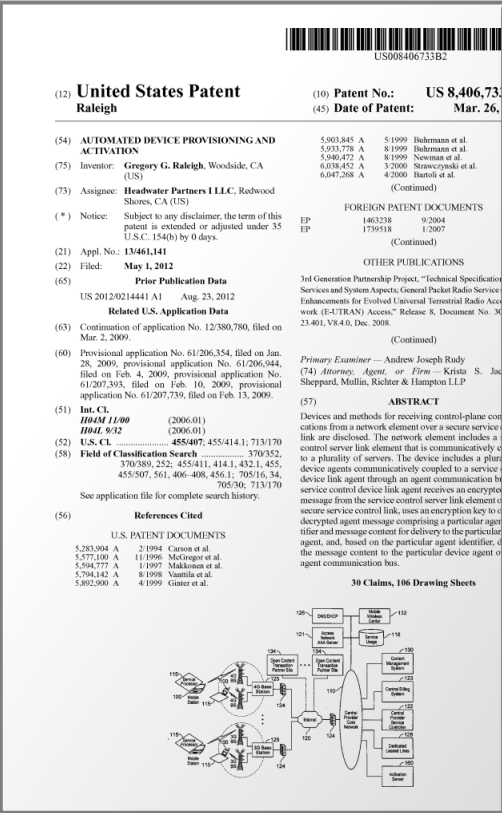
## The '733 Patent

1

***“device agents”***

*’733 Patent, Claims 1, 19, 26, 30*

Headwater’s Proposed Construction	Samsung’s Proposed Construction
Not indefinite; plain and ordinary meaning, i.e., agent on the device	Indefinite




1. An end-user device comprising:  
a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;  
a plurality of **device agents** communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of **device agents** identifiable by an associated **device agent** identifier; and  
memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

wherein the service control device link agent is configured to:  
receive, over the service control link, an encrypted agent message from the service control server link element, using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular **device agent** of the plurality of **device agents**, the particular agent identifier identifying the particular **device agent**, the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and  
based on the particular agent identifier, deliver the message content to the particular **device agent** over the agent communication bus.

D94-2 Ex. 1 ('733 Patent) at Claim 1

# The Language Of Claim 1 Fails To Helps With Indefiniteness

**Headwater alleges that “[t]hese limitations further inform a POSITA and describe, for example, the location, connections, and functions of the recited ‘device agents.’” Headwater Opening, EFC No. 94 at 5.**



US008406733B2

(12) **United States Patent**  
**Raleigh**

(10) **Patent No.:** US 8,406,733  
(45) **Date of Patent:** Mar. 26, 2012

(54) **AUTOMATED DEVICE PROVISIONING AND ACTIVATION**

(75) **Inventor:** Gregory G. Raleigh, Woodside, CA (US)

(73) **Assignee:** Headwater Partners I LLC, Redwood Shores, CA (US)

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** 13/461,141

(22) **Filed:** May 1, 2012

(65) **Prior Publication Data**  
US 2012/0214441 A1 Aug. 23, 2012

**Related U.S. Application Data**

(63) **Continuation of application No. 12/380,780, filed on Mar. 2, 2009.**

(60) **Provisional application No. 61/206,354, filed on Jan. 28, 2009, provisional application No. 61/206,944, filed on Feb. 4, 2009, provisional application No. 61/207,393, filed on Feb. 10, 2009, provisional application No. 61/207,739, filed on Feb. 13, 2009.**

(51) **Int. Cl.**  
**H04M 1/00** (2006.01)  
**H04L 9/32** (2006.01)

(52) **U.S. Cl.** ..... 455/407; 455/414.1; 713/170

(58) **Field of Classification Search** ..... 370/352, 370/359, 322; 455/411, 414.1, 432.1, 455, 455/507, 561, 406-408, 456.1; 705/16, 34, 705/50, 713/170

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,293,994 A 2/1994 Carson et al.

5,577,100 A 11/1998 McGee et al.

5,594,777 A 1/1997 Makonnen et al.

5,784,142 A 8/1999 Vamvakis et al.

5,892,900 A 4/1999 Ginter et al.

**FOREIGN PATENT DOCUMENTS**

EP 1403238 9/2004

EP 1739518 1/2007

(Continued)

**OTHER PUBLICATIONS**

3rd Generation Partnership Project, “Technical Specification Services and Systems Aspects; General Packet Radio Service; Enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Access,” Release 8, Document No. 36, 23-401, V8.4.0, Dec. 2008.

(Continued)

**Primary Examiner** — Andrew Joseph Rudy

(74) **Attorney, Agent, or Firm** — Krista S. Joo, Sheppard, Mullin, Richter & Hampton LLP

(57) **ABSTRACT**

Devices and methods for receiving control-plane communications from a network element over a secure service link are disclosed. The network element includes a control server link element that is communicatively coupled to a plurality of servers. The device includes a plurality of device agents communicatively coupled to a service device link agent through an agent communication bus. Each of the plurality of device agents is identifiable by an associated device agent identifier; and memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

wherein the service control device link agent is configured to:

receive, over the service control link, an encrypted agent message from the service control server link element, using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular device agent of the plurality of device agents, the particular agent identifier identifying the particular device agent, the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and based on the particular agent identifier, deliver the message content to the particular device agent over the agent communication bus.

1. An end-user device comprising:

a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;

a plurality of device agents communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of device agents identifiable by an associated device agent identifier; and

memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

D94-2 Ex. 1 ('733 Patent) at Claim 1

1. An end-user device comprising:
  - a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;
  - a plurality of **TBD** communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of **TBD** **TBD** identifiable by an associated **TBD** identifier; and
  - memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

wherein the service control device link agent is configured to:

receive, over the service control link, an encrypted agent message from the service control server link element, using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular **TBD** of the plurality of **TBD** the particular agent identifier identifying the particular **TBD** the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and

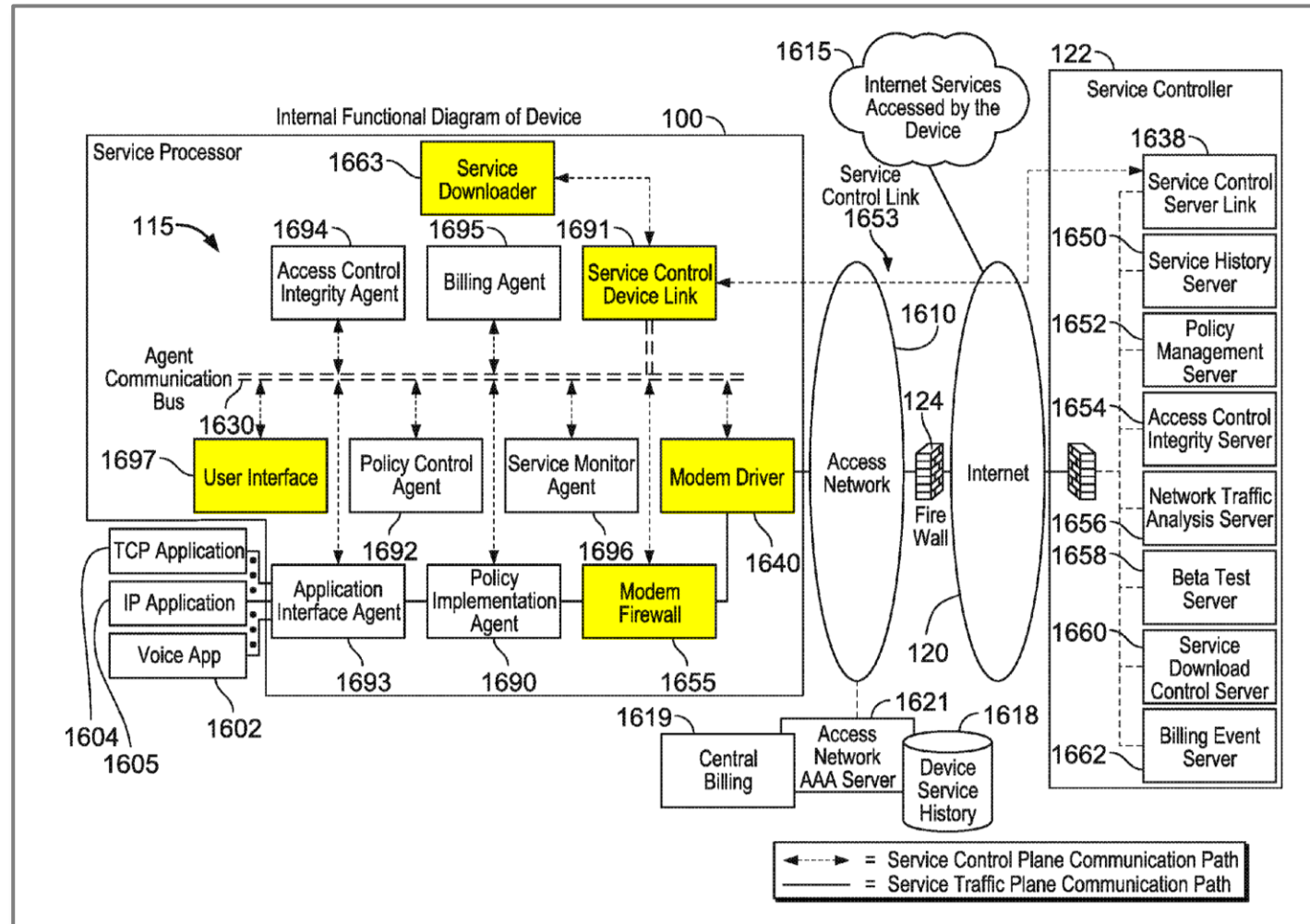
based on the particular agent identifier, deliver the message content to the particular **TBD** over the agent communication bus.

D94-2 Ex. 1 ('733 Patent) at Claim 1



# The Language Of Claim 1 Fails To Helps With Indefiniteness


*Other components are also connected to the “agent communication bus.”*



D94-2 Ex. 1 ('733 Patent) at Fig. 16

# Headwater's Construction—An Agent On The Device—Further Proves Indefiniteness

*The agent is already on the device but Headwater admits that “[h]ere, ‘device’ narrows the plain meaning of ‘agent,’” and “device agent” does not mean “exactly the same thing as ‘agent.’” Headwater Reply, EFC No. 99 at 4, 5.*



US080406733B2

(12) United States Patent  
Raleigh

(10) Patent No.: US 8,406,733  
(45) Date of Patent: Mar. 26, 2012

(54) AUTOMATED DEVICE PROVISIONING AND ACTIVATION

(75) Inventor: Gregory G. Raleigh, Woodside, CA (US)

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 13/461,141

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(51) Int. Cl. H04L 1/00 (2006.01)  
H04L 9/32 (2006.01)

(52) U.S. CL. 455/407; 455/414.1; 713/170

(58) Field of Classification Search 370/352, 370/359, 322; 455/411, 414.1, 432.1, 455, 455/507, 561, 406-408, 456.1; 705/16, 34, 705/50, 713/170

See application file for complete search history.

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U.S. PATENT DOCUMENTS

5,263,994 A 2/1994 Carson et al.

5,577,100 A 11/1996 McGee et al.

5,594,777 A 1/1997 Makonnen et al.

5,784,142 A 8/1999 Vamtila et al.

5,892,900 A 4/1999 Ginter et al.

FOREIGN PATENT DOCUMENTS

EP 1403238 9/2004

EP 1739518 1/2007

OTHER PUBLICATIONS

3rd Generation Partnership Project, “Technical Specification Services and Systems Aspects; General Packet Radio Service; Enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Access,” Release 8, Document No. 36, 23-401, V8-4.0, Dec. 2008.

(Continued)

Primary Examiner — Andrew Joseph Rudy

(74) Attorney, Agent, or Firm — Krista S. Joo, Sheppard, Mullin, Richter & Hampton LLP

ABSTRACT

Devices and methods for receiving control-plane communications from a network element over a secure service link are disclosed. The network element includes a control server link element that is communicatively coupled to a plurality of servers. The device includes a plurality of device agents communicatively coupled to a service device link agent through an agent communication bus. The service device link agent receives an encrypted message from the service control server link element over a secure service control link, uses an encryption key to decrypt the message, and based on the particular agent identifier, delivers the message content to the particular agent agent communication bus.

30 Claims, 106 Drawing Sheets

1. An end-user device comprising:  
a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;  
a plurality of **TBD** communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of **TBD** **TBD** identifiable by an associated **TBD** identifier; and  
memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

wherein the service control device link agent is configured to:  
receive, over the service control link, an encrypted agent message from the service control server link element, using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular **TBD** of the plurality of **TBD** the particular agent identifier identifying the particular **TBD** the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and  
based on the particular agent identifier, deliver the message content to the particular **TBD** over the agent communication bus.

D94-2 Ex. 1 ('733 Patent) at Claim 1

1. An end-user device comprising:
  - a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;
  - a plurality of device agents communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of device agents identifiable by an associated device agent identifier; and
  - memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

D94-2 Ex. 1 ('733 Patent) at Claim 1

# Headwater's Construction—An Agent On The Device—Contradicts the Specification

*Headwater alleges that the “specification of the ‘733 patent confirm[s]” that the device agent is on the device. Headwater Opening, EFC No. 94 at 5. But Figure 13 Shows External Device Agents...*

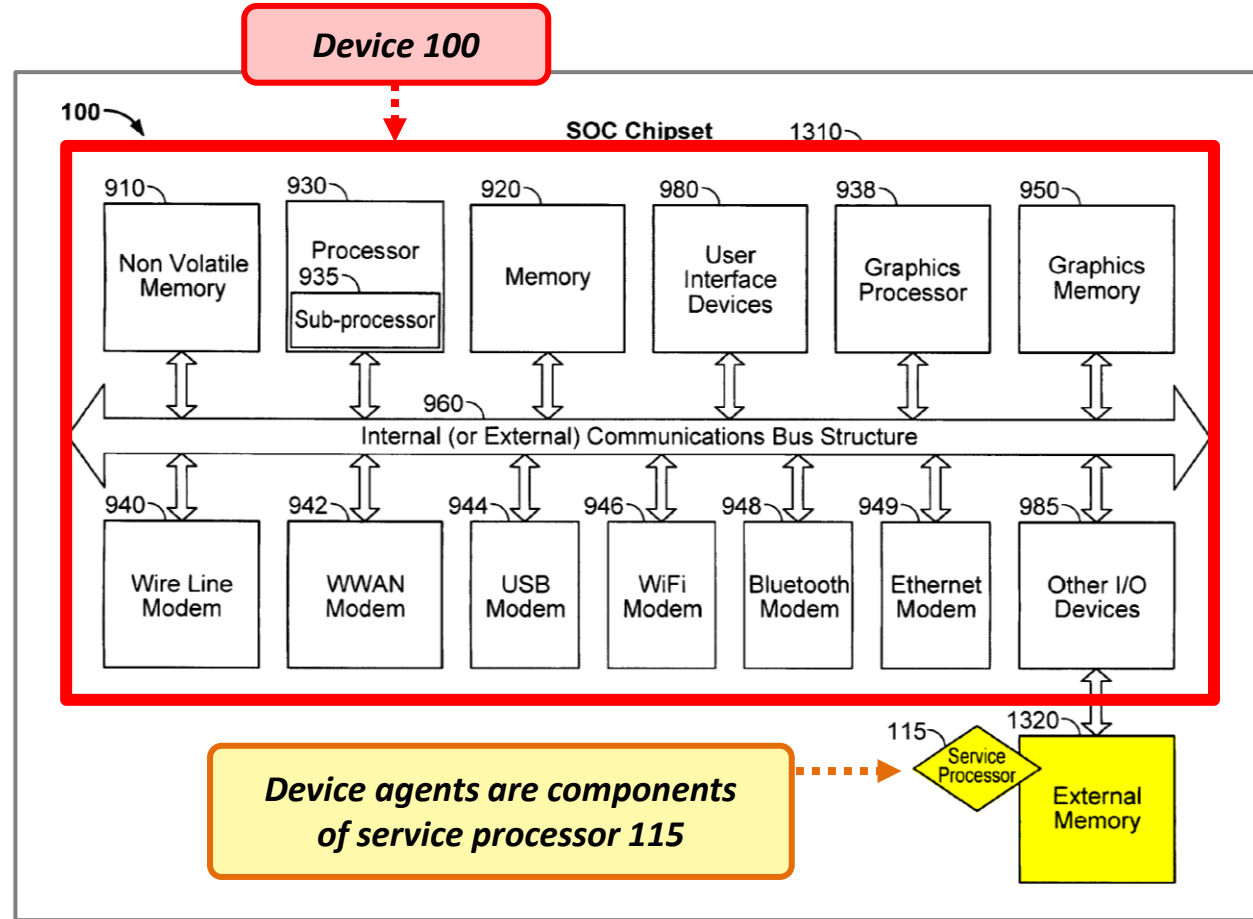


FIG. 13 illustrates another hardware diagram of a device 100 that includes a service processor 115 implemented in external memory of a System On Chip (SOC) 1310 in accordance with some embodiments. As shown in FIG. 13, the service processor 115 is implemented on the external memory 1320 of the device 100. In some embodiments, this implementation can be in part or whole accomplished in software stored, implemented and/or executed on the external memory 1320. In some embodiments, the implementation and/or execution can be in part or whole accomplished in hardware that is on the external memory 1320. In some embodiments, SOC chipset 1310 and external memory 1320 provide a portion or all of the hardware of device 100.

D94-2 Ex. 1 ('733 Patent) at 31:27-39

D94-2 Ex. 1 ('733 Patent) at Fig. 13 (annotated)



# Headwater Cannot Simply Combine "Device" and "Agent"



“Network Commerce also agrees that a definition of the term ‘download component’ as a whole does not exist, but invites the court to combine individual dictionary definitions of ‘download’ and ‘component.’ Under that construction, any part of a system involved in the transfer of data from one computer to another would be a download component.

***This is not a tenable theory in light of the specification.”***

*Network Commerce, Inc. v. Microsoft Corp.*, 422 F.3d 1353, 1360 (Fed. Cir. 2005)  
(emphasis added)

# Headwater Cannot Simply Combine "Device" and "Agent"



"3Shape's approach of construction by combining ordinary dictionary definitions of 'focal' and 'plane' is generally disfavored and, more importantly, is ***not how a POSA would understand the term at issue here.***"

*Align Tech., Inc. v. 3Shape*, 2021 WL 2320139, at \*12 (D. Del. June 7, 2021) (emphasis added)

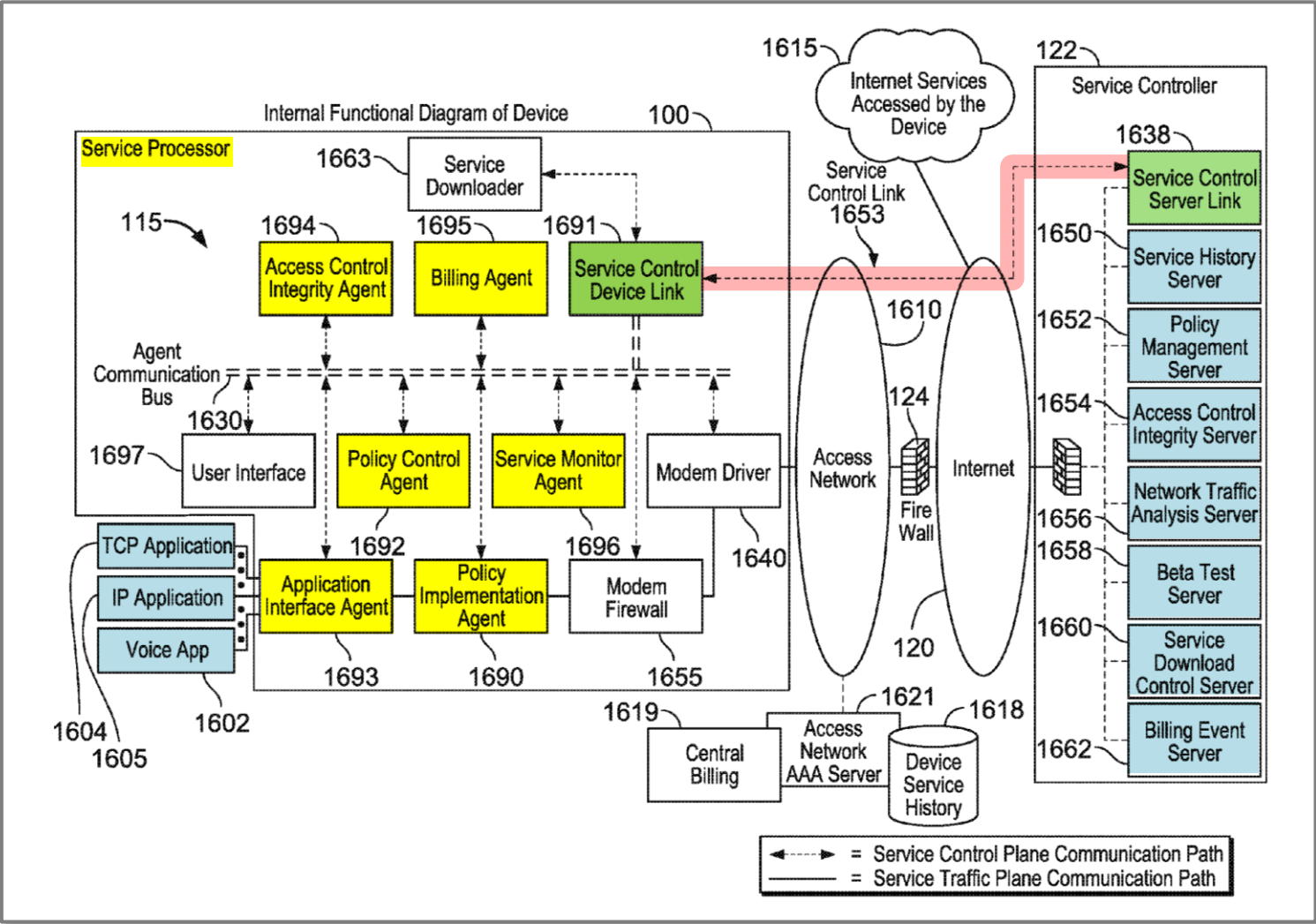


"[S]imply combining the definitions of 'cardiac' and 'function' results in a broad, vague definition that is ***untenable in light of the specification.***"

*Tehrani v. Polar Electro, Inc.*, 2007 U.S. Dist. LEXIS 80037, at \*18-19 (C.D. Cal. Oct. 3, 2007) (emphasis added)



“Device Agents”

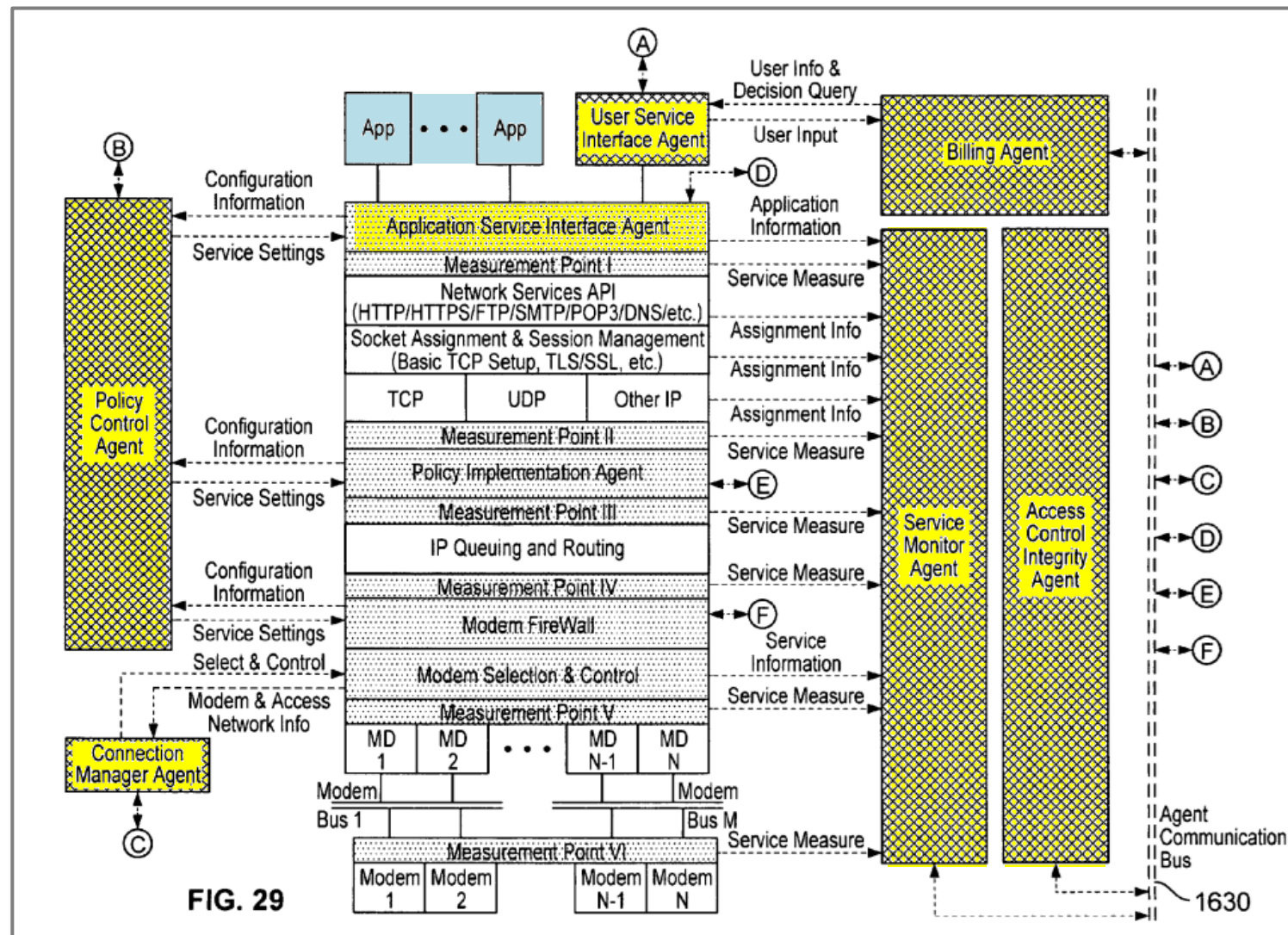


D94-2 Ex. 1 ('733 Patent) at Fig. 16



# "Device Agents"

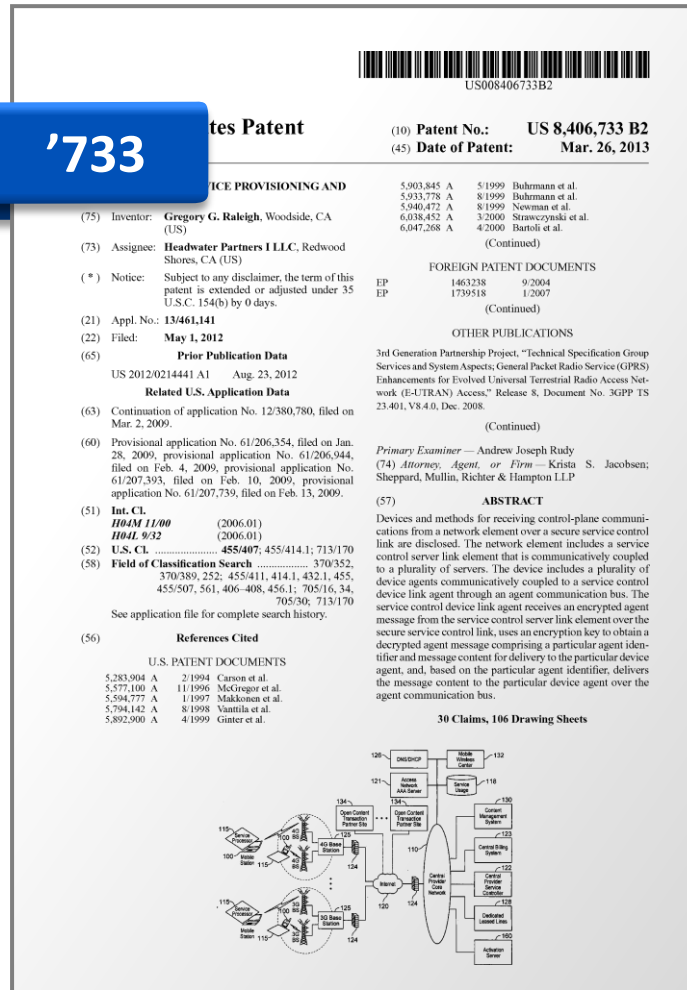
"BREW® (Binary Runtime Environment for Wireless from Qualcomm® Inc.), Symbian OS (from Symbian Software Ltd) and Apple iPhone 3G App Store (from Apple Inc.)" D94-2 Ex. 1 ('733 Patent) at 8:47-50.



D94-2 Ex. 1 ('733 Patent) at Fig. 29

# “Flattened” Network Architecture

'733

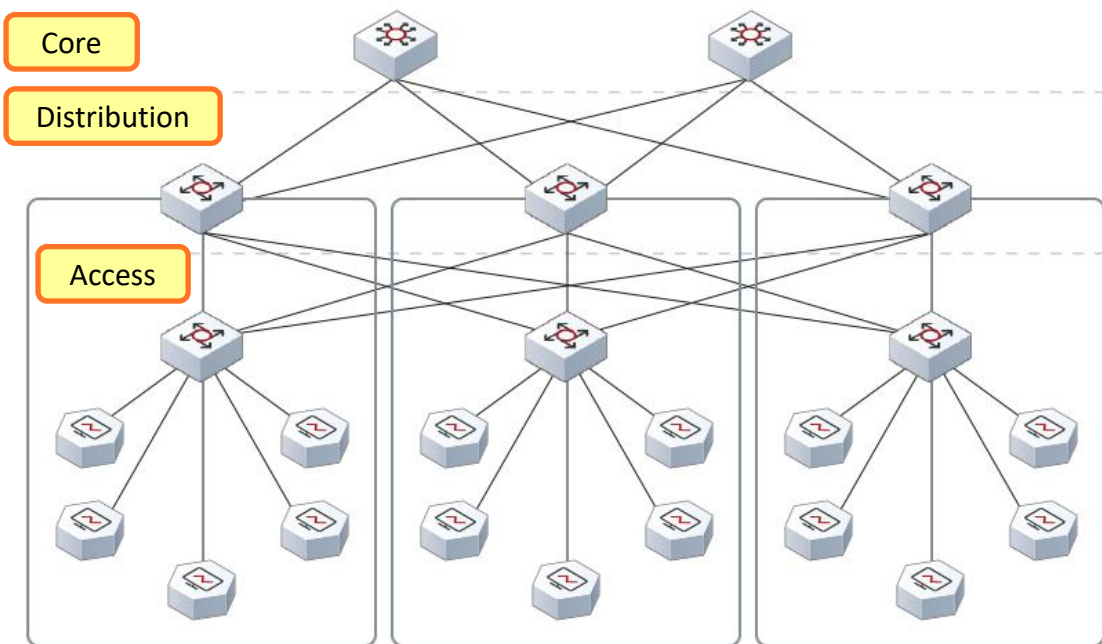


network. Because the control plane traffic between the service control servers and the device agents that implement service policies can be several orders of magnitude slower than the data plane traffic, service control server network placement and back-haul infrastructure is much less performance sensitive than the data plane network. In some embodiments, as described further below, this architecture can be overlaid onto all the important existing access network architectures used today. In some embodiments, this architecture can be employed to greatly simplify core access network routing and data plane traffic forwarding and management. For example, in the case of wireless networks, the incorporation of device assisted service policy implementation architectures can result in base stations that directly connect to the Internet local loop and the data traffic does not need to be concentrated into a dedicated core network. This results, for example, in a large reduction in backhaul cost, core network cost and maintenance cost. These cost savings can be re-deployed to purchase and install more base stations with smaller cells, which results in higher data capacity for the access network leading to better user experience, more useful applications and lower service costs. This flattened network-ing architecture also results in latency reduction as fewer routes are needed to move traffic through the Internet. In some

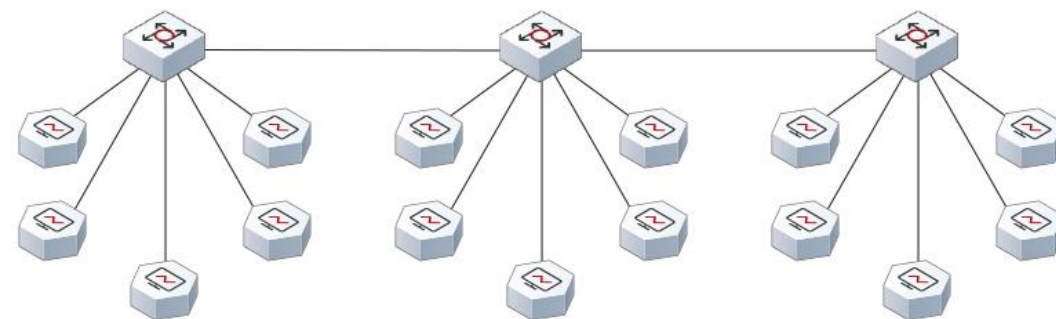
D94-2 Ex. 1 ('733 Patent) at 11:35-58

# "Flattened" Network Architecture

## Hierarchical Network Architecture





## Flattened Network Architecture



# “Device Agent” Creates a Prohibited “Zone of Uncertainty” for Infringement

For example, Samsung Galaxy phones and tablets comprise multiple device agents (e.g., operating system software and/or applications) which have an identifier. *See e.g.*,

Firestore > Documentation > FCM > Engage

Was this helpful?  

## Set up a Firebase Cloud Messaging client app on Android

Send feedback

FCM clients require devices running Android 4.4 or higher that also have the Google Play Store app installed, or an emulator running Android 4.4 with Google APIs. Note that you are not limited to deploying your Android apps through Google Play Store.

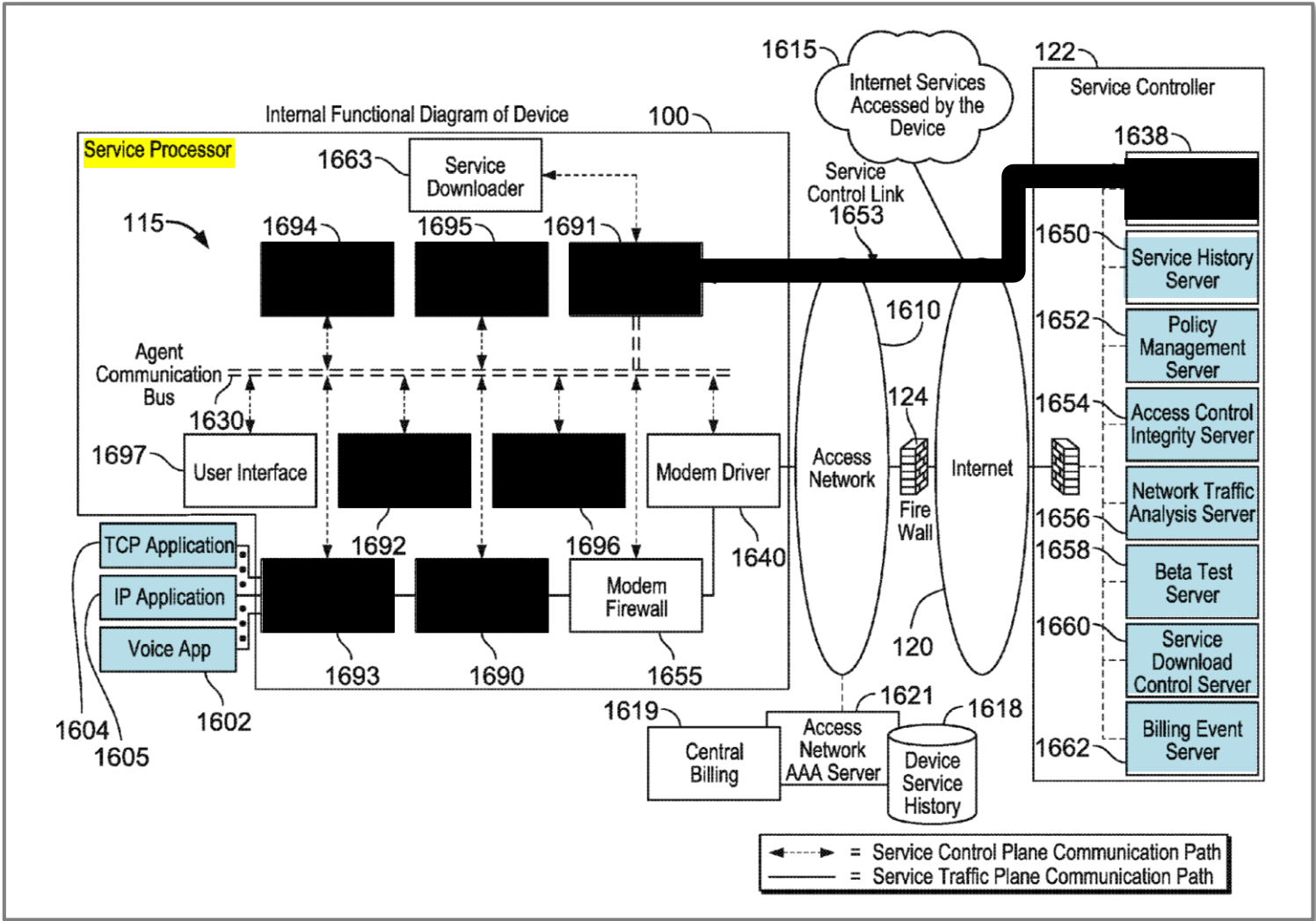
### Set up the SDK

This section covers tasks you may have completed if you have already enabled other Firebase features for your app. If you haven't already, [add Firebase to your Android project](#)

D96-5 Ex. D (Headwater Infringement Chart) at 14



# “Device Agents”



D94-2 Ex. 1 ('733 Patent) at Fig. 16

# Nautilus: Definiteness Check Prevents Patentees From Expanding Scope



“[A] patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them. Otherwise there would be **a zone of uncertainty** which enterprise and experimentation may **enter only at the risk of infringement claims**. And **absent a meaningful definiteness check, we are told, patent applicants face powerful incentives to inject ambiguity into their claims.**”

*Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014) (emphasis added)

## ***Stanton Techiya v. Samsung*, Case No. 2:21-CV-00413-JRG-RSP (2023)**

“Because ‘natural sounding . . . to the user’ is subjective and the intrinsic record provides no objective standard by which a skilled artisan can determine what is, and what is not, a ‘natural sounding voice,’ this term is indefinite.”

*Id.* at 31

“Regarding method Claims 1 and 7, the Court construes ‘proximate to the earphone device’ as ‘included in the earphone device.’ The only disclosed embodiment of an earphone device ‘includes’ the ASM as part of the device.... Although courts normally do not limit claim scope to only the disclosed embodiments, consistent description of the invention as a whole can be limiting. *See C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864 (Fed. Cir. 2004)....”

*Id.* at 35

# “Agent” Terms Have Been Found Indefinite



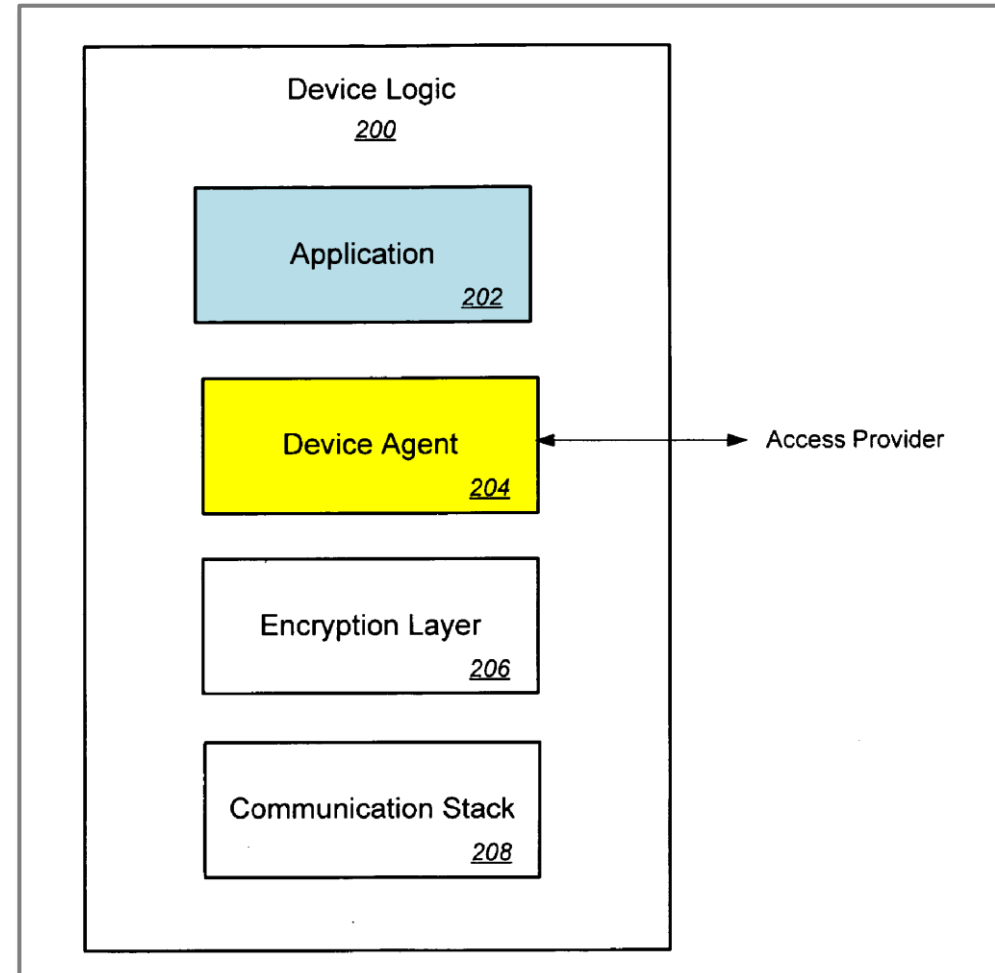
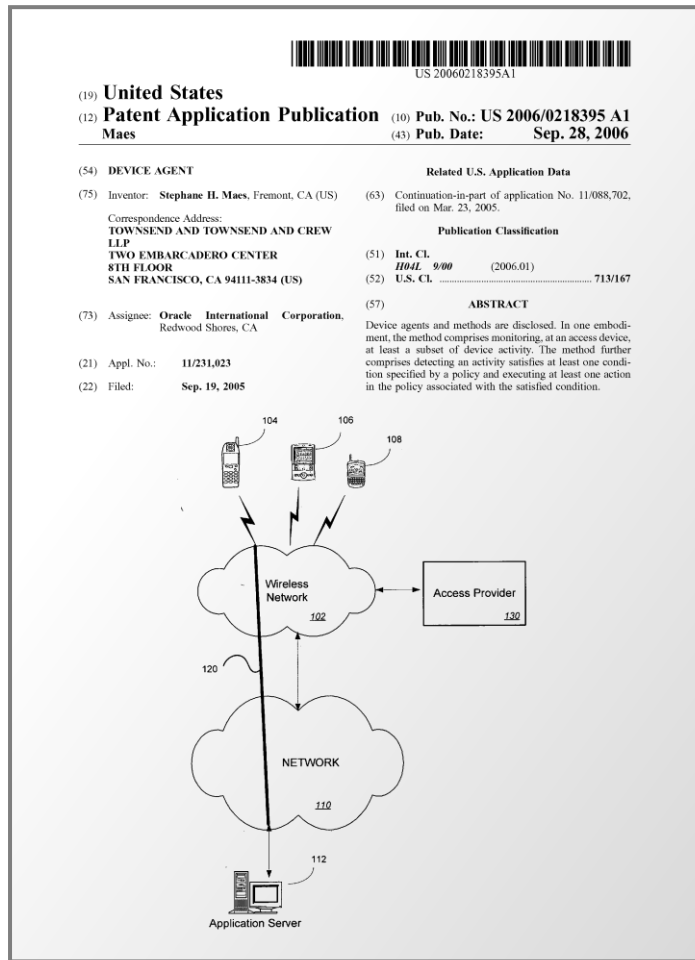
*Joao Control & Monitoring Sys., LLC v. Protect Am., Inc.*,  
No. 1-14-CV-134-LY, 2015 WL 4937464, at \*7–8 (W.D. Tex. Aug. 18, 2015)

4. “Intelligent agent” [’363 and ’077 Patents]	<b>[indefinite]</b>
5. “Software agent” [’363 and ’077 Patents]	<b>[indefinite]</b>
6. “Mobile agent” [’363 and ’077 Patents]	<b>[indefinite]</b>



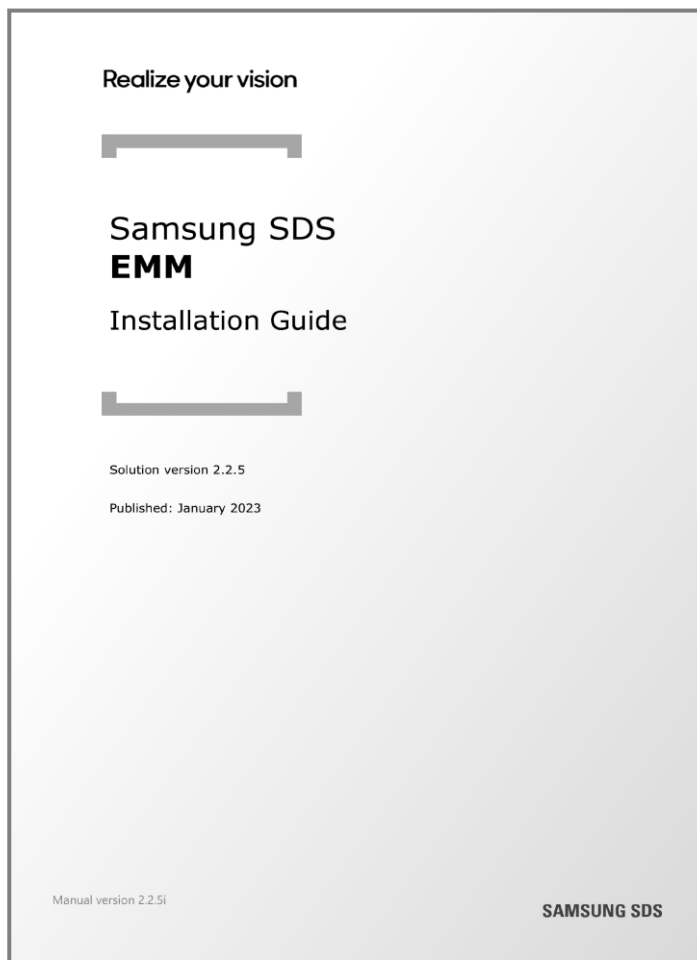
# The '395 Application Undermines Headwater's Construction

## U.S. Patent App. Pub. 2006/0218395



D94-10 Ex. 9 ('395 Pat. Appl.) at Fig. 2

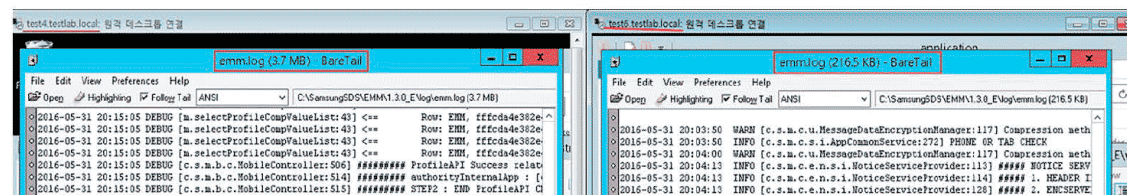
# Samsung EMM Guide Shows Applications Are Not Device Agents



## Downloading applications

Download an application from the App Store and delete it from the terminal to proceed with the failover testing.

- Pre-Test
  1. Prepare a device with the EMM service activated.
  2. Remotely access each server where EMM is installed, and monitor both of the EMM server logs by using a program such as a tail program. Restrict the use of the EMM server to checking the logs only for the test purposes.

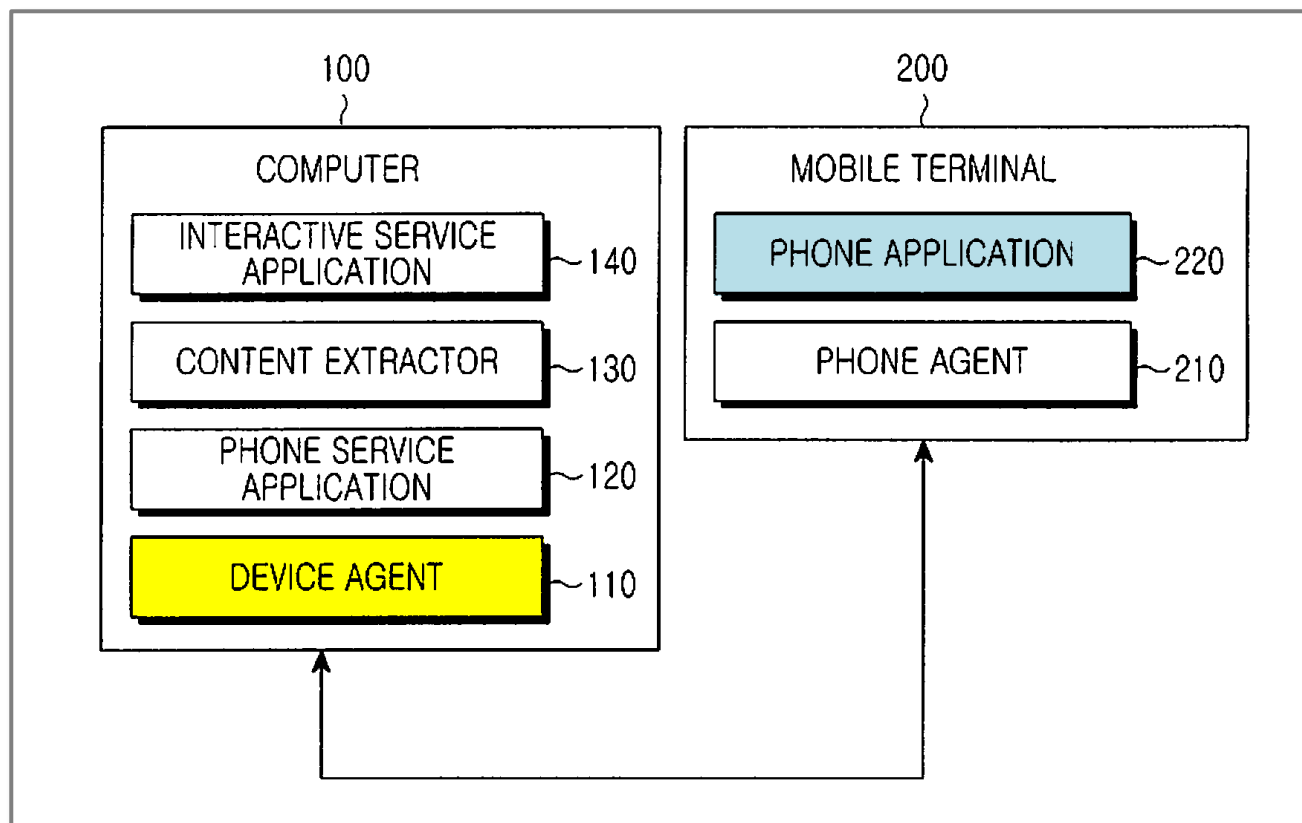
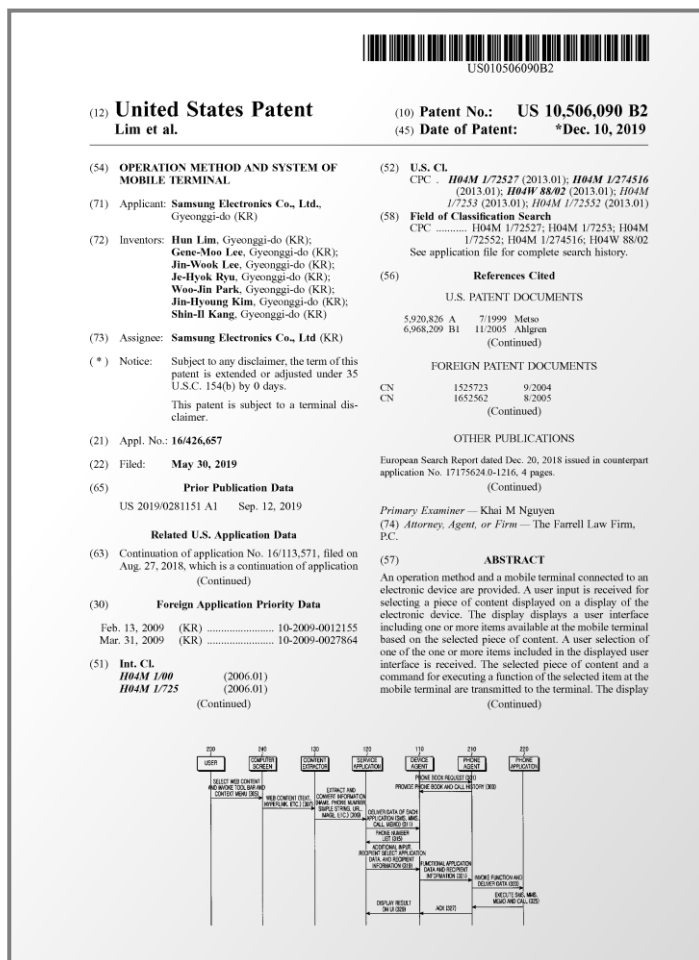


D96-7 Ex. F (EMM Guide) at p. 98

- **XXX\_ETCP\_PORT**: TCP Port number for communication between the Push external components, including the Push Device Agent (DA) and Service Agent (SA).

D96-7 Ex. F (EMM Guide) at p. 159

# '090 Patent Undermines Headwater's Construction



D94-13 Ex. 12 ('090 Patent) at Fig. 1

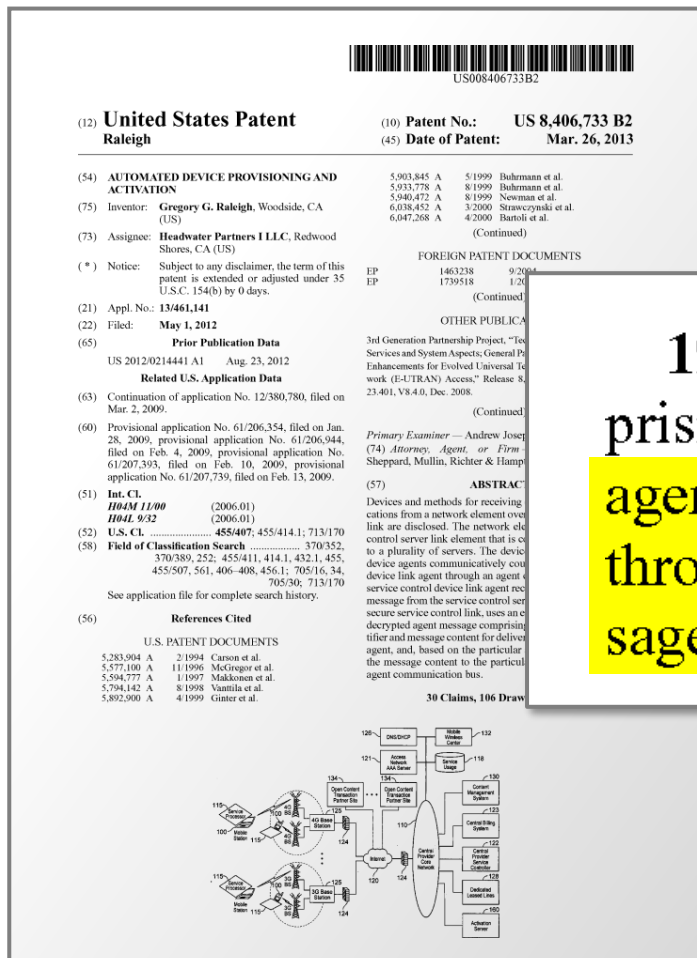
2

***“wherein the particular device agent is configured to assist in presenting a notification through the user interface, the notification based on the message content”***

*’733 Patent, Claim 19*

Headwater’s Proposed Construction	Samsung’s Proposed Construction
Not indefinite; plain and ordinary meaning	Indefinite

# '733 Patent, Claim 19



19. The end-user device recited in claim 1, further comprising a user interface, and wherein the particular device agent is configured to assist in presenting a notification through the user interface, the notification based on the message content.

D94-2 Ex. 1 ('733 Patent) at Claim 19

## The '117 Patent

3

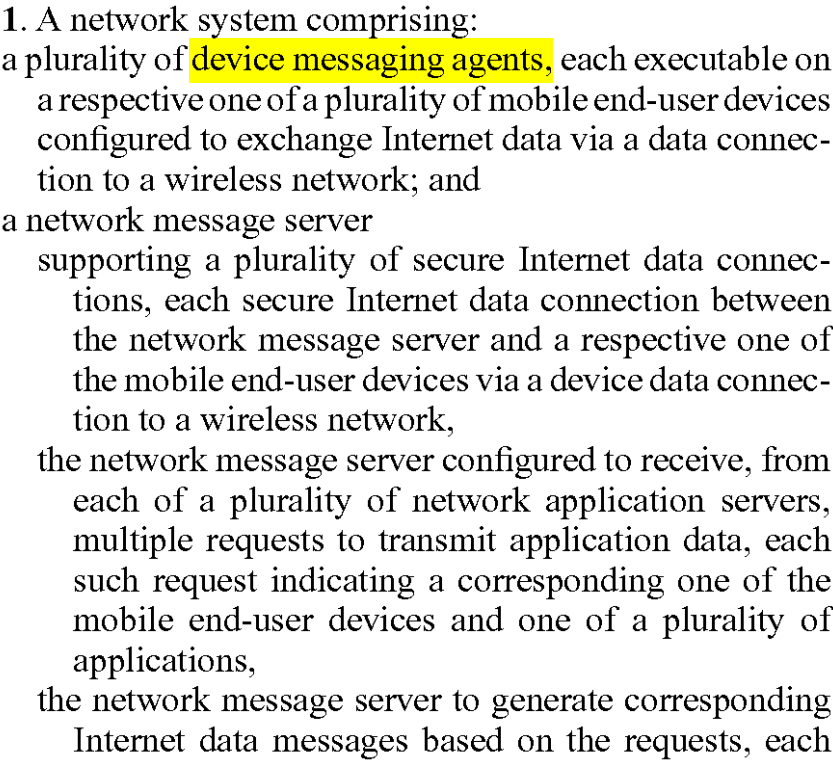
***“device messaging agents”***

*’117 Patent, Claims 1, 4, 5, 6, 12, 13, 14, 18*

Headwater’s Proposed Construction	Samsung’s Proposed Construction
Not indefinite; plain and ordinary meaning	Indefinite

**DISPUTE**

Whether the term “messaging” renders the “device . . . agent” term definite



D94-3 Ex. 2 ('117 Patent) at Claim 1



# The '117 Patent's "Device Messaging Agent" Clashes With the '733 Patent's "Device Agents"

"Device agents" receive message content

## '733 Patent at Claim 1

1. An end-user device comprising:  
 a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;  
 a plurality of device agents communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of device agents identifiable by an associated device agent identifier; and  
 memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

wherein **the service control device link agent is configured to:**  
**receive, over the service control link, an encrypted agent message from the service control server link element,**  
 using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular device agent of the plurality of device agents, the particular agent identifier identifying the particular device agent, the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and  
 based on the particular agent identifier, **deliver the message content to the particular device agent over the agent communication bus.**

D94-2 Ex. 1 ('733 Patent) at Claim 1

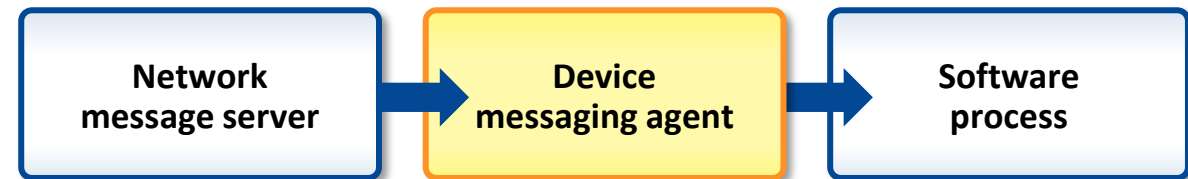


"Device messaging agents" forward messages to processes

## '117 Patent at Claim 1

1. A network system comprising:  
 a plurality of device messaging agents, each executable on a respective one of a plurality of mobile end-user devices configured to exchange Internet data via a data connection to a wireless network; and  
 a network message server  
 supporting a plurality of secure Internet data connections, each secure Internet data connection between the network message server and a respective one of the mobile end-user devices via a device data connection to a wireless network,  
 the network message server configured to receive, from each of a plurality of network application servers, multiple requests to transmit application data, each such request indicating a corresponding one of the mobile end-user devices and one of a plurality of applications,  
 the network message server to generate corresponding Internet data messages based on the requests, each such message containing at least one application identifier for an indicated application and application data corresponding to one of the requests, and  
**the network message server to transmit each of the generated Internet data messages to the device messaging agent** located on the device indicated in the corresponding request, using the corresponding secure Internet data connection for the device indicated in the corresponding request;  
 each **device messaging agent**, when executing,  
**to receive the Internet data messages** from the secure Internet data connection corresponding to the device executing the device messaging agent, and  
 to, for each received message, map the application identifier in the message to a software process corresponding to the application identifier, **and forward the application data in the message to the software process** via a secure interprocess communication service.

D94-3 Ex. 2 ('117 Patent) at Claim 1



# The Original Specification Does Not Disclose Any “Device Messaging Agents”

US009198117B2

(12) **United States Patent**  
**Raleigh**

(10) **Patent No.:** US 9,198,117 B2  
(45) **Date of Patent:** Nov. 24, 2015

(54) **NETWORK SYSTEM WITH COMMON SECURE WIRELESS MESSAGE SERVICE SERVING MULTIPLE APPLICATIONS ON MULTIPLE WIRELESS DEVICES**

(71) Applicant: **Headwater Partners I LLC**, Redwood City, CA (US)

(72) Inventor: **Gregory G. Raleigh**, Woodside, CA (US)

(73) Assignee: **Headwater Partners I LLC**, Redwood City, CA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/667,516

(22) Filed: Mar. 24, 2015

(65) **Prior Publication Data**  
US 2015/0200882 A1 Jul. 16, 2015

**Related U.S. Application Data**

(63) Continuation of application No. 14/263,604, filed on Apr. 28, 2014, now Pat. No. 9,037,127, which is a continuation of application No. 12/380,780, filed on Mar. 2, 2009, now Pat. No. 8,839,388. (Continued)

(51) **Int. Cl.**  
**G06F 15/16** (2006.01)  
**H04L 9/32** (2006.01)  
(Continued)

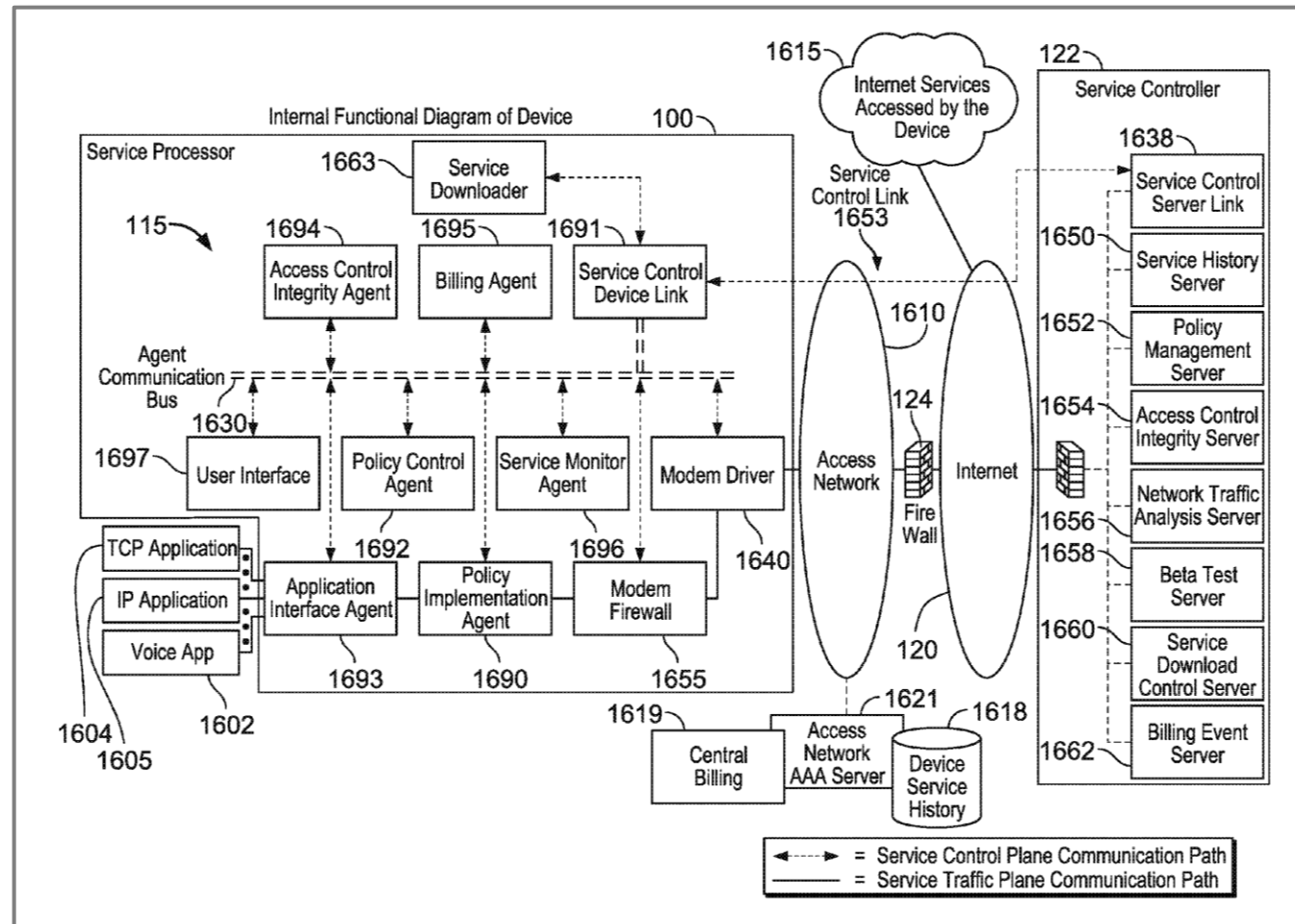
(52) **U.S. Cl.**  
CPC ..... **H04W 48/14** (2013.01); **G06F 15/177** (2013.01); **G06Q 10/06375** (2013.01); (Continued)

(58) **Field of Classification Search**  
USPC ..... 709/203, 204, 206, 207, 217, 219, 223; 713/168-170; 705/28, 30; 455/405, 455/406, 411, 414.1  
See application file for complete search history.

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VerizonWireless.com news, “Verizon Wireless Adds to Portfolio of Consumer-Friendly Tools With Introduction of Usage Controls, Usage Controls and Chaparrone 2.0 Offer Parents Full Family Security Solution,” Aug. 18, 2008. (Continued)

**ABSTRACT**  
(57) Each of several mobile end-user devices contains a device messaging agent that securely communicates with a network message server over a wireless network. The network message server delivers messages to the device messaging agent on behalf of a plurality of network application servers. Each network application server supplies the network message server with application data and an indication of a device and an application on the device to which the application data should be delivered. The network message server securely passes the data and an application identifier to the device messaging agent on the appropriate mobile end-user device. The device messaging agent maps the application identifier to a software process corresponding to the application, and a secure interprocess communication service delivers the application data to that software process.

**18 Claims, 106 Drawing Sheets**



D94-3 Ex. 2 ('117 Patent) at Fig. 16

Case 2:13-cv-00103-PC-JST Document 1-1 Filed 03/24/15 Page 3 of 3  
Only the Patent's Abstract, as Amended Six Years After the Priority Date,  
Uses "Device Messaging Agents"

Please replace the **Abstract** with the following:

Each of several mobile end-user devices contains a **device messaging agent** that securely communicates with a network message server over a wireless network. The network message server delivers messages to the **device messaging agent** on behalf of a plurality of network application servers. Each network application server supplies the network message server with application data and an indication of a device and an application on the device to which the application data should be delivered. The network message server securely passes the data and an application identifier to the **device messaging agent** on the appropriate mobile end-user device. The **device messaging agent** maps the application identifier to a software process corresponding to the application, and a secure interprocess communication service delivers the application data to that software process.

REMARKS

Applicant respectfully requests entry of the amendments provided herein. This preliminary amendment is presented before any office action. Claim 1 has been cancelled, and new claims 2-19 have been added. No new matter has been added. If the Examiner has any questions or needs any additional information, the Examiner is invited to contact the undersigned.

The Commissioner is authorized to charge any fee deficiency or credit any overpayment to Deposit Account 50-5876.

Respectfully submitted,

Date: March 25, 2015

By: /James E. Harris/

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'117 Patent File History, March 25, 2015 Amendment





## The '192 Patent

4

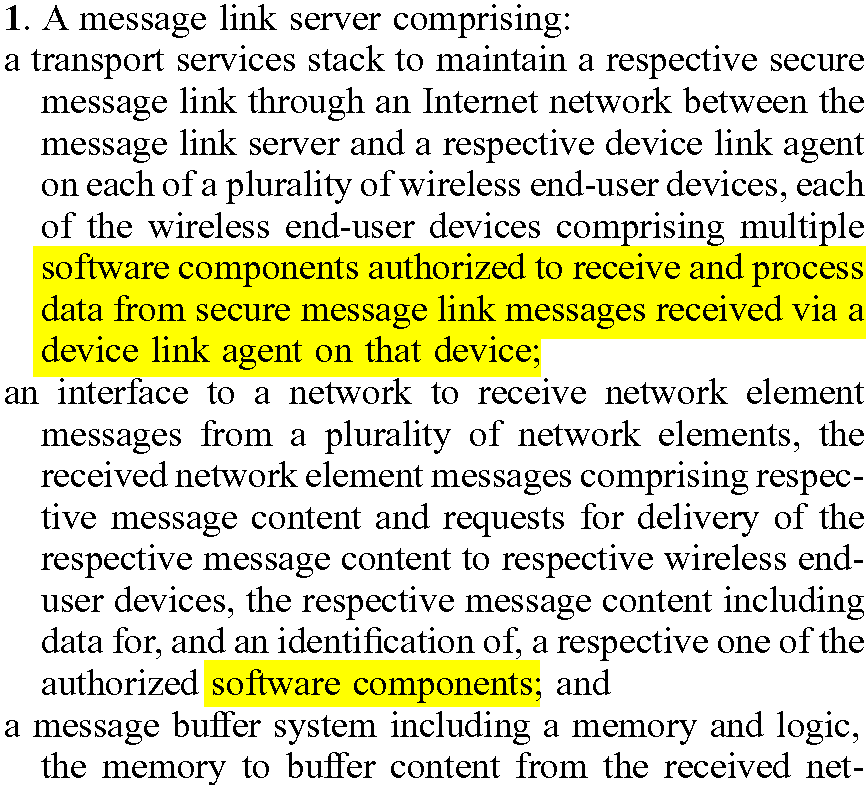
***“software components”***

*’192 Patent, Claims 1, 4, 15*

Headwater’s Proposed Construction	Samsung’s Proposed Construction
Not indefinite; plain and ordinary meaning	Indefinite

**DISPUTE**

Whether a POSITA would be reasonably certain about the scope of “software components” in the context of the ’192 patent.



work element messages for which delivery is requested to a given one of the wireless end-user devices,

the logic to determine when one of a plurality of message delivery triggers for the given one of the wireless end-user devices has occurred, wherein for at least some of the received network element messages, the receipt of such a message by the message buffer system is not a message delivery trigger, and for at least one of the message delivery triggers, the trigger is an occurrence of an asynchronous event with time-critical messaging needs, and

upon determining that one of the message delivery triggers has occurred, the logic further to supply one or more messages comprising the buffered content to the transport services stack for delivery on the secure message link maintained between the transport services stack and a device link agent on the given one of the wireless end-user devices.

D94-4, Ex. 3 ('192 Patent) at Claim 1



# The Specification Generally Distinguishes Software Components From Device Agents

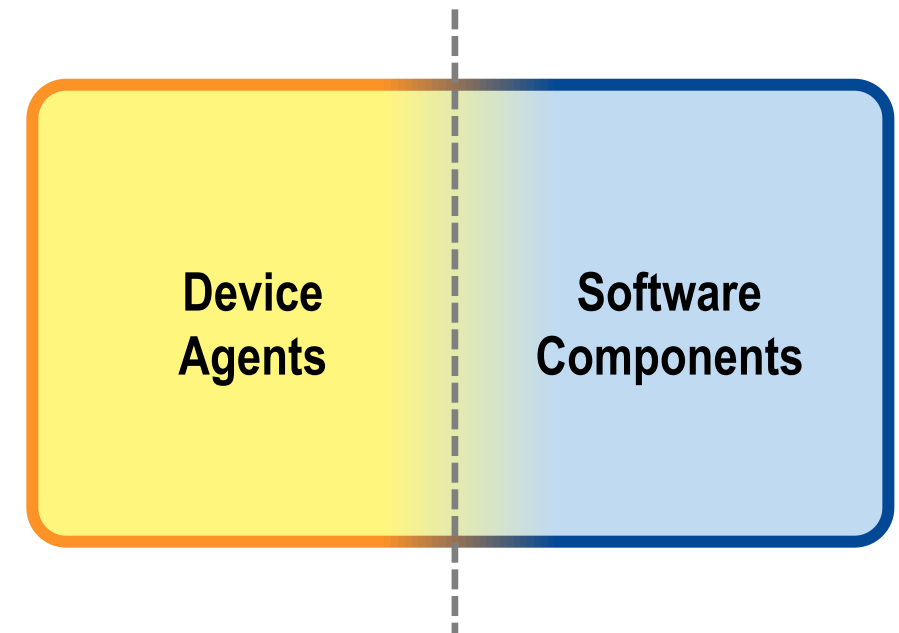
encrypted or otherwise protected. For example, the session bus can be further protected by storing all software (e.g., software components, applications and/or agents) in secure memory, storing all software in encrypted form in secure memory, and/or executing all software and communications within a secure execution environment, hardware environment and/or protected memory space. In some embodi-

D94-4, Ex. 3 ('192 Patent) at 43:31-37

various service processor heartbeat functions and parameters (e.g., implemented by various agents, components, and/or functions implemented in software and/or hardware)

D94-4, Ex. 3 ('192 Patent) at 92:21-23

If “device agents” is indefinite,  
“software components”  
are also indefinite



# The Specification Generally Distinguishes Software Components From Device Agents

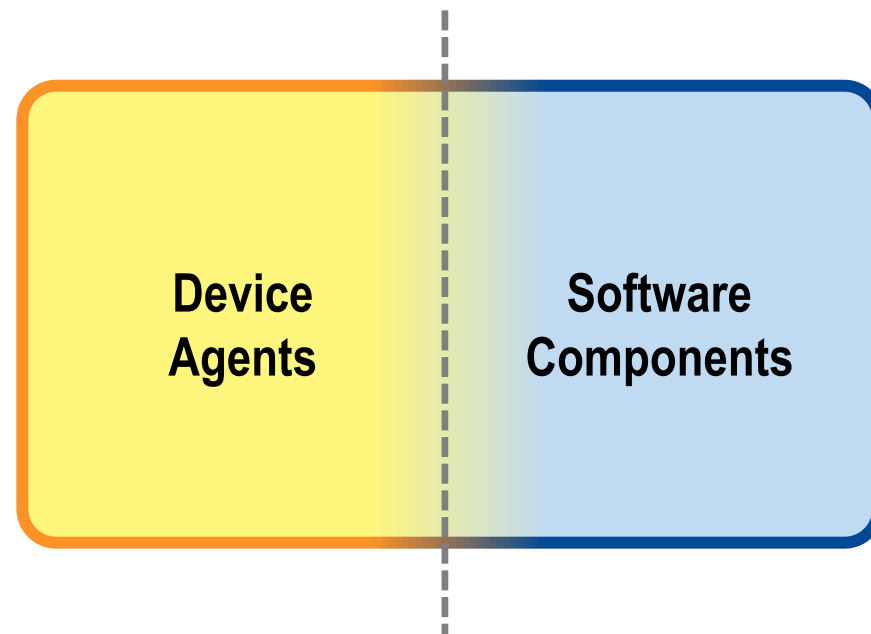
In some embodiments, a policy control agent 1692 receives policy instructions from the service controller 122 and/or the user via the billing agent 1695 and adapts device service policy settings (e.g., instantaneous device service policy settings) in one or more of the following agents/components: a policy implementation agent 1690, the modem firewall 1655 and/or an application interface agent 1693. As shown in FIG. 16, the modem firewall 1655 is in

D94-4, Ex. 3 ('192 Patent) at 48:31-38

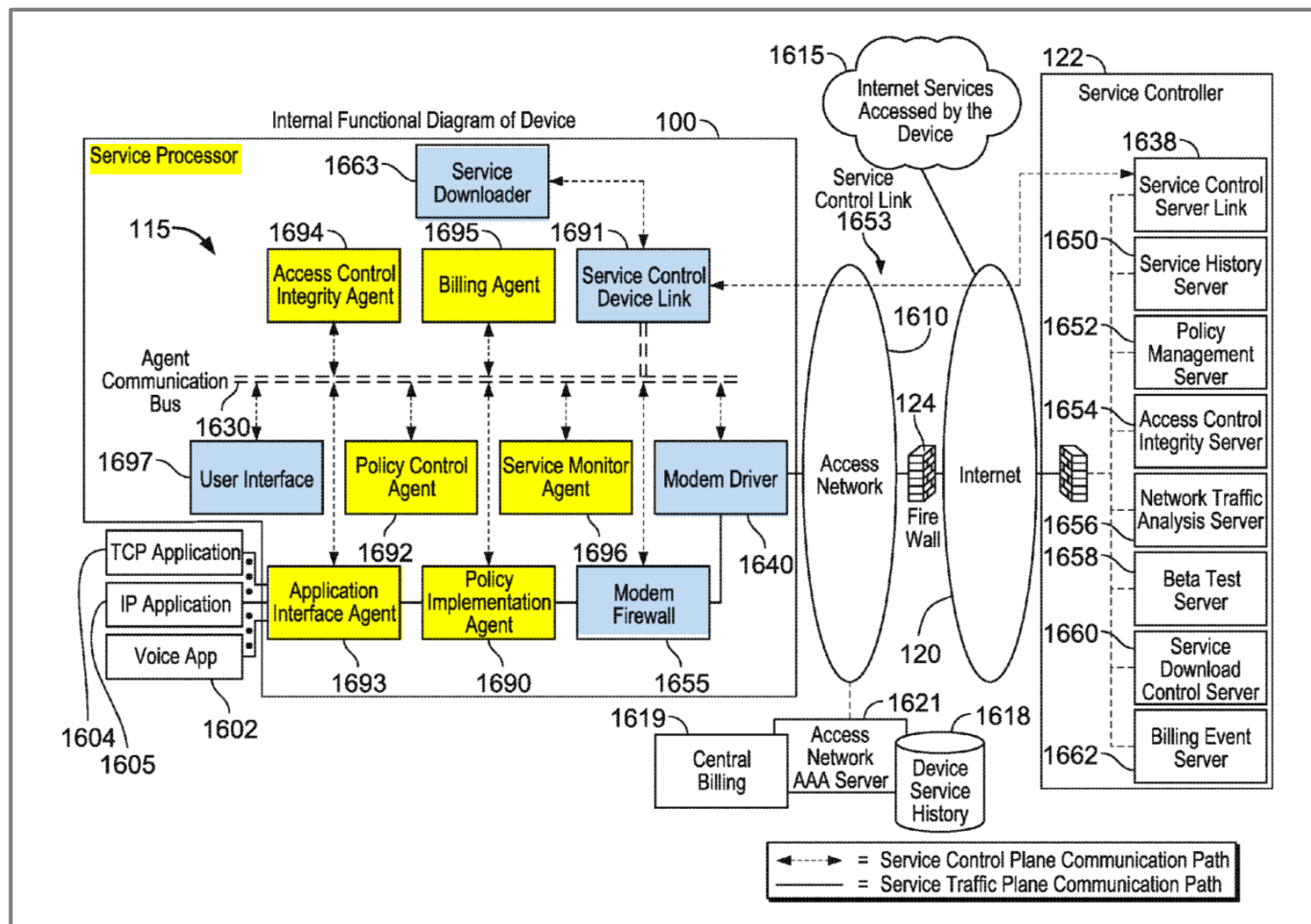
In some embodiments, an Activation Tracking Service (ATS) is provided in which the service monitoring function (e.g., performed by the service monitor agent 1696 and/or some other agent/component or combinations thereof on the device) is used in part to determine which access networks are being connected to and to record and/or report this information. In some embodiments, the ATS is only enabled

D94-4, Ex. 3 ('192 Patent) at 46:32-38

If “device agents” is indefinite,  
“software components”  
are also indefinite



# The Specification Generally Distinguishes Software Components From Device Agents



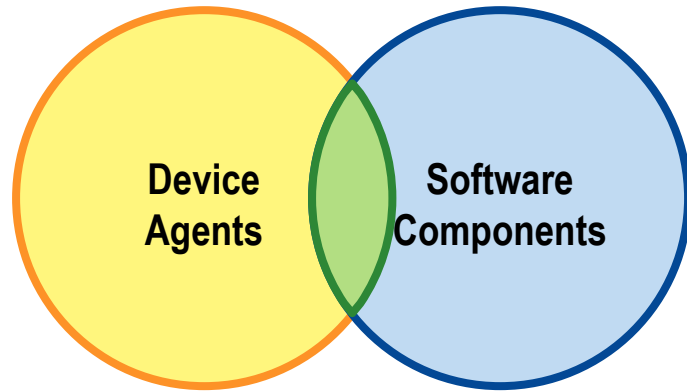
D94-4 Ex. 3 ('192 Patent) at Fig. 16

If “device agents” is indefinite,  
“software components”  
are also indefinite

Device  
Agents

Software  
Components

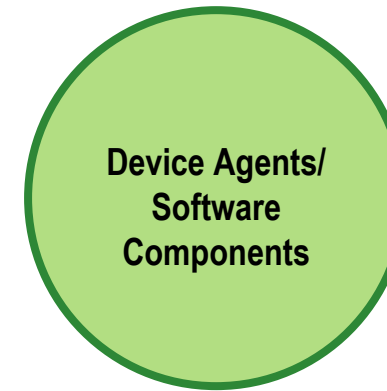
# But a Few Passages Treat Device Agents and Software Components as Overlapping



**“agents” can be implemented as “software components”**

ware. In some embodiments, all or substantially all of the service processor 115 functionality (as discussed herein) is implemented and stored in software that can be performed on (e.g., executed by) various components in device 100.

D94-4, Ex. 3 ('192 Patent) at 28:23-26



**“components” are examples of “agents”**

information between the device agents (e.g., service processor agents/components) and other network elements (e.g., service controller agents/components).

D94-4, Ex. 3 ('192 Patent) at 69:54-56

5

***“wherein one of the message delivery triggers is the receipt of a particular network element message from one of the network elements”***

*’192 Patent, Claim 13*

Headwater’s Proposed Construction	Samsung’s Proposed Construction
Not indefinite; plain and ordinary meaning	Indefinite

**DISPUTE**

Whether a POSITA would be reasonably certain as to the scope of “particular network element message”



(10) Patent No.: US 9,615,192 B2  
(45) Date of Patent: Apr. 4, 2017

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(Continued)

Princess Examination Ali Akbarab

(74) *Attorney, Agent, or Firm* — James E. Harris

(57) ABSTRACT

A message link server maintains secure message device link agents on each of a plurality of wireless devices. Plural network elements send message link server, the messages targeted for delivery to specific software components or one of the wireless end-user devices. A buffering system in the server buffers messages to each device until one of several triggers occur, messages that do not have time-critical message may be buffered until the occurrence of a trigger or the receipt of that message by the server.

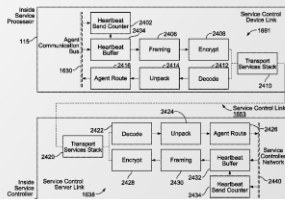
A message link server maintains secure message device link agents on each of a plurality of wireless devices. Plural network elements send message link server, the messages targeted for delivery to specific software components or one of the wireless end-user devices. A buffering system in the server buffers messages to each device until one of several triggers occur, messages that do not have time-critical message may be buffered until the occurrence of a trigger or the receipt of that message by the server.

A message link server maintains secure message device link agents on each of a plurality of wireless devices. Plural network elements send message link server, the messages targeted for delivery to specific software components or one of the wireless end-user devices. A buffering system in the server buffers messages to each device until one of several triggers occur, messages that do not have time-critical message may be buffered until the occurrence of a trigger or the receipt of that message by the server.

A message link server maintains secure message device link agents on each of a plurality of wireless devices. Plural network elements send message link server, the messages targeted for delivery to specific software components or one of the wireless end-user devices. A buffering system in the server buffers messages to each device until one of several triggers occur, messages that do not have time-critical message may be buffered until the occurrence of a trigger or the receipt of that message by the server.

See application file for complete search history.

15 Claims, 106 Drawing Sheets



'192 Patent at Claim 13

# The Basic Definition of “Particular”—One of Many—Is Not Disputed



**Don Turnbull, Ph.D.** | *Technical Expert for Samsung*

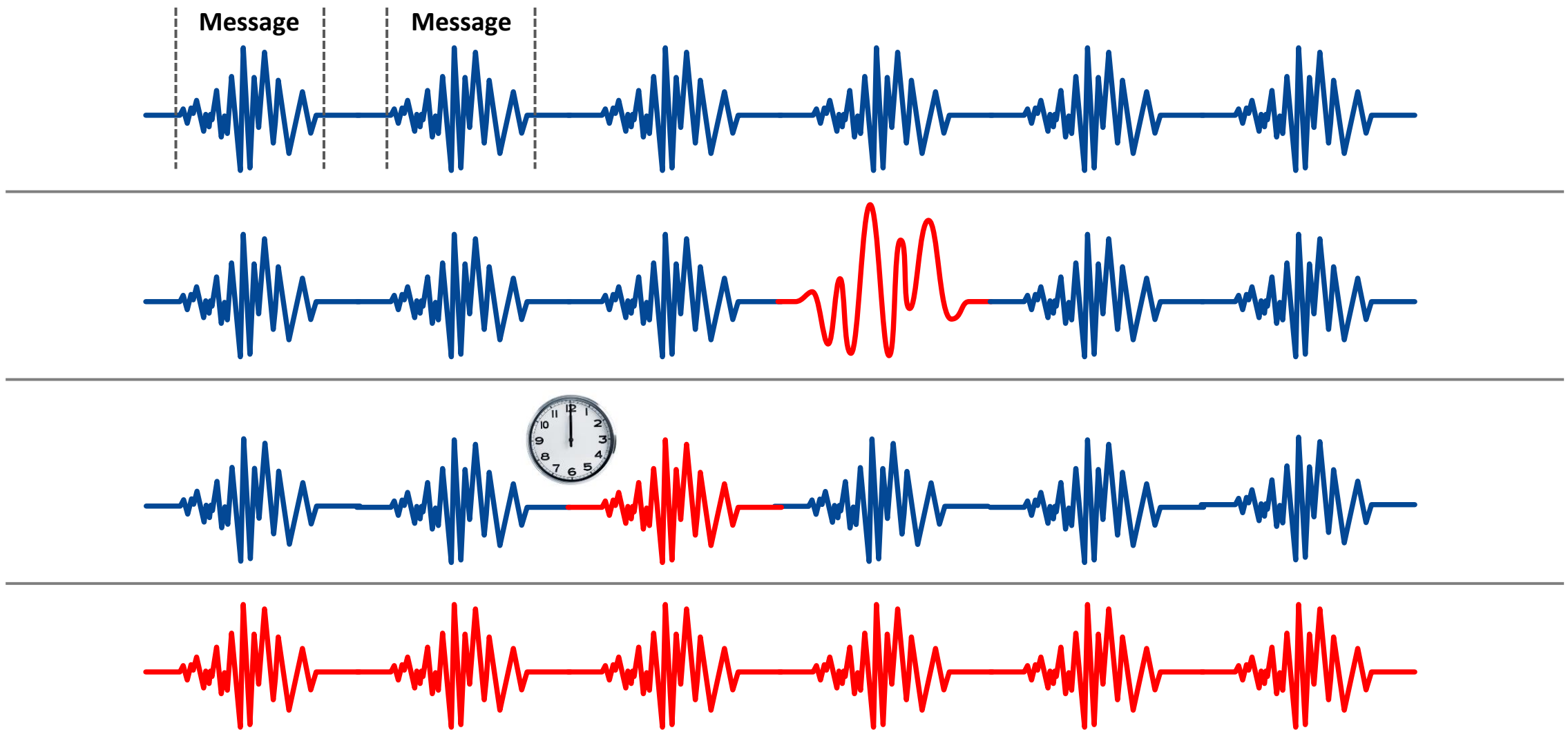
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POSITA would know “particular network element message” in the claims means “not any network element message, it’s a particular type of one or a particular one.”

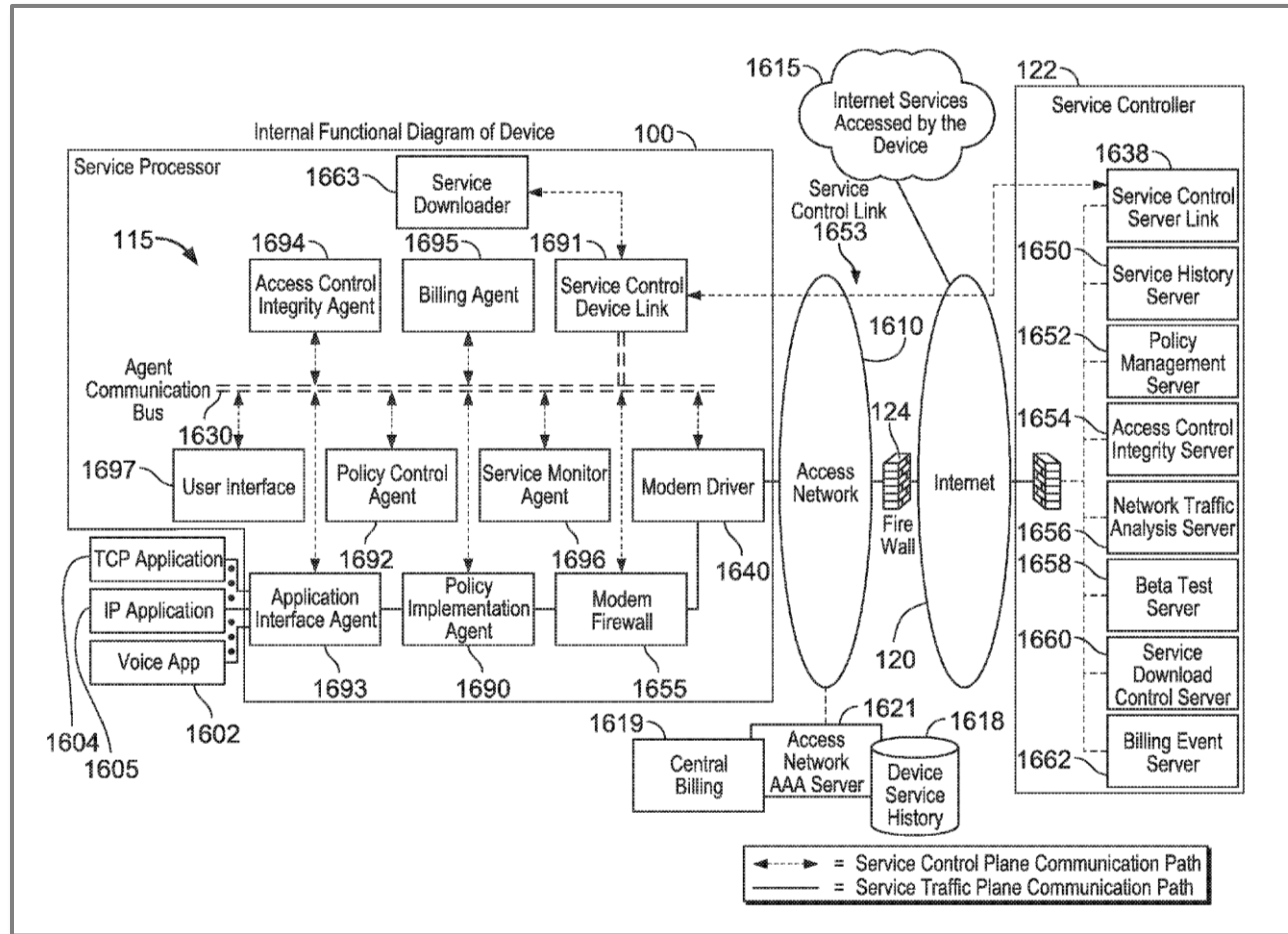
Turnbull Dep. at 128:12-25



# But a “Particular” Message Being One of Many Does Not Provide a POSITA With Certainty



# Specification Provides No Clear Discussion of What Constitutes a “Particular” Message



D94-4, Ex. 3 ('192 Patent) at Fig. 16

service control related communications over the link. For example, the service control server link 1638 can transmit server messages asynchronously as they arrive. As another example, the service control server link 1638 can perform collection or buffering of server messages between transmissions. As another example, the service control server link 1638 can determine when to transmit based potentially on several parameters, such as one or more of: periodic timer trigger, waiting until a certain amount of service usage or traffic usage has occurred, responding to a service agent message, responding to a service agent request, initiated by one or more servers, initiated by a verification error condition, and/or initiated by some other error condition. For

D94-4, Ex. 3 ('192 Patent) at 70:1-13